APPLICANT'S NAME: M. C. GILL CORPORATION

MAILING ADDRESS: 4076 EASY STREET
EL MONTE, CA 91731

EQUIPMENT LOCATION: SAME AS ABOVE

EQUIPMENT DESCRIPTION:

Application no. 456665 (PO no PC) – replacement of afterburner #5 (C7) under A/N 335261:

AIR POLLUTION CONTROL SYSTEM, CONSISTING OF:

1. REGENERATIVE THERMAL OXIDIZER, #8, ADWEST, MODEL NO. RETOX 16.0, RTO 95, SERIAL NO. 2289, 8'-0" W. 34'-10" L. X 11'-0" H., WITH TWO HEAT EXCHANGER BEDS WITH CERAMIC MEDIA, ONE 4,500,000 BTU PER HOUR, NATURAL GAS-FIRED START-UP BURNER, ONE 7.5-HP. COMBUSTION AIR BLOWER, AND NATURAL GAS INJECTION (C49).

2. EXHAUST SYSTEM WITH ONE 100-HP. EXHAUST FAN (16,000 CFM) VENTING TWO HONEYCOMB BAKE OVENS (D5 & D6), DIP COATING OPERATION #2 (D9), AND ROTOCURE PRESS #10 (D41).

Application no. 423281

TITLE V PERMIT REVISION, DE MINIMIS SIGNIFICANT

Application no. 456662, Administrative Change to RTO #6 (C47) (Prev. A/N 407669) to vent D16-D17 and D20-D22 (and no longer vent D9 and D41) and add C47 to Process 3 in FP

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
Process ~~2~~ 3: DIP TANK IMPREGNATING OPERATION					
System 1: HONEYCOMB DIPPING AND BAKING					
~~PROCESS TANK, DIP, INSIDE DIP IMPREGNATING ROOM NO. 2, 4129 GALS; WIDTH: 7 FT 1 IN; HEIGHT: 4 FT 10 IN; LENGTH: 16 FT 1 IN A/N 302960~~	~~**D9**~~	~~**C49**~~		~~**VOC**: (9) [**RULE 1128, 3-8-1996; RULE 1171,11-7-2003;**RULE 1171,5-6-2005]~~	~~A63.8, B59.6, B61.3, C8.1, H23.3, K67.9, K67.12~~
~~PRESS, ROTOCURE, CUSTOM MADE, 60 IN WEB WIDTH, 10 FT W. X 20 FT L. X 10 FT H., WITH A DIP PAN, STEEL BELT, 2 STEAM HEATED ROLLS IN A PERMANENT TOTAL ENCLOSURE A/N: 336669~~	~~**D41**~~	~~**C49**~~			~~A63.8, A63.9, B59.8, E193.2, K67.9~~

AFTERBURNER, HOT ROCK, ADWEST, MODEL NO. RETOX 9.0, RTO 95, 10 FT W. X 22 FT 10 IN L. X 8 FT H., NATURAL GAS, WITH 2 CERAMIC BEDS, A 7.5 HP. COMB. AIR FAN, A 50 HP EXHAUST FAN AND NATURAL GAS INJEC. 2.5 MMBTU/HR A/N 407669	**C47**	~~**D9 D41**~~ **D16 D17 D20 D21 D22**		**CO:** 2000 PPMV NATURAL GAS (5A) [**RULE 407,4-2-1982];PM:** 0.1 GRAINS/SCF NATURAL GAS (5A) [**RULE 409,8-7-1981**];PM: (9) [**RULE 404,2-7-1986**]	A63.8, A72.2, D28.1, D323.1, E193.3

Application no. 456663, Administrative Change to Adhesive Coating, Honeycomb printer and afterburner (D19-D22 and C23) (Prev. A/N 235674):

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
Process 3: ADHESIVE COATING OPERATION					
System 1: OVEN, COATER, TANK AND CONTROL EQUIPMENT					
~~COATER, ALODINE A/N: 235674~~	~~**D19**~~			~~**VOC**: (9) [**RULE 1128,3-8-1996;RULE 1171,11-7-2003**;RULE 1171,5-6-2005]~~	~~B59.1, H23.3, K67.9~~
COATER, ADHESIVE A/N: 456663	**D20**	~~**C23**~~ **C47**		**VOC**: (9) [**RULE 1124,9-21-2001;RULE 1171,11-7-2003**;RULE 1171,~~5-6-2005~~ 5-1-2009]	A63.8, B59.1, H23.3, K67.9
PROCESS TANK, DIP, COATER, WIDTH: 1 FT 2 IN; HEIGHT: 4 FT 6 IN; LENGTH: 2 FT 6 IN A/N 456663	**D21**	~~**C23**~~ **C47**		**VOC**: (9) [**RULE 1124,9-21-2001;RULE 1171,11-7-2003**;RULE 1171,~~5-6-2005~~ 5-1-2009]	A63.8, H23.3, K67.9
OVEN, DRYING, PROCESS HEAT IS FROM AFTERBURNER C47, AUTOMATED INDUSTRIAL SYSTEMS A/N: 456663	**D22**	~~**C23**~~ **C47**			A63.7, K67.9
AFTERBURNER, HOT ROCK, ADWEST, MODEL NO. RETOX 9.0, RTO 95, 10 FT W. X 22 FT 10 IN L. X 8 FT H., NATURAL GAS, WITH 2 CERAMIC BEDS, A 7.5 HP. COMB. AIR FAN, A 50 HP EXHAUST FAN AND NATURAL GAS INJEC. 2.5 MMBTU/HR *A/N 456662*	***C47***	***D20 D21 D22***		***CO:** 2000 PPMV NATURAL GAS (5A) [**RULE 407,4-2-1982];PM:** 0.1 GRAINS/SCF NATURAL GAS (5A) [**RULE 409,8-7-1981**];PM: (9) [**RULE 404,2-7-1986**]*	*A63.8, A72.3, D28.1, D323.1, E193.3*

Application no. 456664, Administrative Change to Pre-pregger #2 (Prev. A/N 333547) to Vent to RTO #6 (C47) instead of to A/B #2 (C18):

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
Process 2: DIP TANK IMPREGNATING OPERATION					
System 3: PREPREGGER #2					
PROCESS TANK, UNHEATED, TRAPEZOIDAL DIP, PREPREGGER NO. 2, WIDTH: 1 FT; HEIGHT: 6 IN; LENGTH: 5 FT A/N 456664	**D16**	**C47**		**VOC**: (9) [**RULE 1128, 3-8-1996; RULE 1171,11-7-2003;**RULE 1171, ~~5-6-2005~~ 5-1-2009]	A63.8, H23.3, K67.9
OVEN, PROCESS HEAT IS FROM AFTERBURNER C47, AUTOMATED INDUSTRIAL SYSTEM A/N: 456664	**D17**	**C47**			A63.8, K67.9
AFTERBURNER, HOT ROCK, ADWEST, MODEL NO. RETOX 9.0, RTO 95, 10 FT W. X 22 FT 10 IN L. X 8 FT H., NATURAL GAS, WITH 2 CERAMIC BEDS, A 7.5 HP. COMB. AIR FAN, A 50 HP EXHAUST FAN AND NATURAL GAS INJEC. 2.5 MMBTU/HR A/N 456662	**C47**	**D16 D17**		**CO:** 2000 PPMV NATURAL GAS (5A) [**RULE 407,4-2-1982];PM:** 0.1 GRAINS/SCF NATURAL GAS (5A) [**RULE 409,8-7-1981**];PM: (9) [**RULE 404,2-7-1986**]	A63.8, A72.3, D28.1, D323.1, E193.3

BACKGROUND:

M.C. Gill Corp. submitted application no. 456665 on 5/4/06 as a Class I for a new RTO #8 (C49) to replace afterburner #5 (C7) under A/N 335261. The equipment is in operation. Therefore, this application is being processed as a Class III (PO, no PC). Also, at the time of submittal, afterburner #5 (A/B #5) was permitted to vent honeycomb bake oven #2 and #3 (device nos. D5 and D6, respectively). This new RTO is being used to vent these same honeycomb ovens D5 and D6. In addition, it is now venting dip room #2 (D9) and Rotocure press #10 (D41) for the control of VOC emissions. Previously, dip room #2 (D9) and Rotocure press #10 (D41) were vented to RTO #6 (C47).

In addition, M.C. Gill submitted A/N 456662 for the administrative change to relocate (within the facility) RTO #6 (C47), under A/N 407669, which was venting dip coating operation #2 (D9) and Rotocure press #10 (D41). RTO #6 has been relocated to vent pre-pregger #2 (D16) and oven (D17) and adhesive coater (D20), adhesive dip coater process tank (D21), and adhesive drying oven (D22). Instead the dip coating operation #2 (D9) and Rotocure press #10 (D41) will vent to RTO #8 (C49). See A/N 456665.

Application no. 456663 was submitted for the administrative change to the adhesive/Honeycomb coating line to remove the alodine coater (D19), and to vent D20-D22 to RTO #6 (C47), instead of to AB #3 (C23), as under A/N 235674. A/B #3 (C23) will also be removed.

A/N 456664 was submitted as an administrative change to pre-pregger #2 to vent D16 and D17 to C47, instead of to AB #2 (C18), as under A/N 333547.

This company is a Title V facility. The Title V renewal permit was issued on 5/9/2005. The above applications are part of the 1st revision since the renewal. A/N 423281 was submitted for a de minimis significant permit revision. A/N 423281 will also serve for the permit revision covered by A/Ns 422026, 456659, 456660, 481672, 446595 and 454623 (under separate evaluation), which includes the operation of RTO #7 (C48) as a replacement to C15 (A/N 422026); the administrative change to separate D11, D12 and D13 from the control equipment C15/C48 as its own permit (A/N 456659); the administrative change to separate D14 to its own permit unit (A/N 456660); operation of a new 20.85 mmBTU/hr low-NO_x boiler (A/N 481672); and the change of conditions to the two spray booths under A/Ns 446595 (D39) and 454623 (D1) (evaluations done separately).

A/N 423281 was submitted for de minimis significant permit revision. A/Ns 447659 and 481672 were also submitted for revision, but will be cancelled.

According to the compliance data base, this company was issued one notice to comply (NC #D16505) on June 25, 2008 for the company to submit a copy of a plume modeling study to the District. According to the responsible District Inspector, the facility was found to be in compliance. Five complaints were filed against the facility in the past two years for various odors. However, none resulted in a finding of non-compliance.

PROCESS DESCRIPTION:

This company manufactures laminated honeycomb panels. These panels are used in air planes for commercial and military use. RTO #8 (C49) replaced A/N #5 (C7). It is used to control VOC emissions from two processes. The first one is from a dip coating operation #2 under PO #R-D90634 (A/N 302960), where phenolic resin is coated onto Nomex honeycomb blocks. The resin is approximately 50% isopropyl alcohol. After coating, this alcohol is purged to the oxidizer from the block prior to baking. The second process, Rotocure press #10, under A/N 336669 is a polyester resin/fiberglass fabric impregnating operation. Rotocure press #10 is used to press laminates made of fiberglass pre-preg. and polyester resin coated fabrics. The latter materials are coated with resin via a dip tank in which the fabric travels through. In this operation, the resin used is an unsaturated polyester resin and has a styrene content of approx. 35%. Only 8% of the styrene is not used in the reaction of the resin. Therefore, the VOC emitted (styrene) is 8% of the styrene in the total resin used at any time. This afterburner will also control the VOC emissions from honeycomb bake ovens (D5 & D6). VOC emissions were vented to afterburner (A/B) #1 and A/B #5 (C7). Now, it will be switched to vent to this afterburner. The Rotocure press #10 and dip room #2 are contained in permanent total enclosures.

The honeycomb bake ovens were originally receiving heat from afterburner #5 (C7), which has been removed from service. Now, these ovens under device nos. D5 & D6 will receive heat from the new RTO #8 (C49).

Rotocure press #10 (D41) was previously vented to regenerative thermal oxidizer #6 (C47). But when the new RTO #8 was installed, Rotocure press #10 was vented to this new RTO along with dip coating operation #2 (D9) and honeycomb ovens (D5 and D6).

RTO #8 was source tested in May 2007. The destruction efficiency was 98.3%. Enclosures for Rotocure press #10 (D41) and dip room #2 (D9) were also verified to be PTE's. The source test report was reviewed by our Source Testing Division and determined to be 'conditionally acceptable'. The applicant requested a 98% overall efficiency condition.

The maximum operating schedule of the facility will be 24 hr/day, 7 day/wk, and 52 wk/yr and the average operating time is 16 hr/day, 6 day/week, 52 week/year.

EMISSION CALCULATIONS:

A/B Combustion Emissions:

1. Data (A/N 456665)
   Fuel = natural gas
   Maximum burner heat input rating – 4.5 mmBTU/hr
   Average Operating Schedule = 16 hrs/day, 6 days/wk, 52 wks/yr
   Maximum Operating Schedule = 24 hrs/day, 7 days/wk, 52 wks/yr
   Refer to Attachment 1 for detailed emissions

Thermal Oxidizer:

The new RTO #8 (C49) has a 4.5 mmBTU/hr burner for start-up, to bring it up to operating temperature (their set-point is 1500°F). It then switches to a gas injection mode where natural gas is injected directly into the combustion chamber as needed to maintain the minimum operating temperature.

The maximum operating schedule of the facility is 24 hrs/day, 7 days/wk, and 52 wks/yr. The average operating schedule is 16 hrs/day, 6 days/wk, and 52 wks/yr.

Refer to Attachment 1 for detailed emissions for RTO #8 (C49) and Attachment 2 shows that combustion emissions for the previous afterburner (C7). The table below tabulates the emissions of NO_x, CO, PM_{10} for both control equipment. There is a net emission decrease due to the replacement of C7 by C49.

Air Contaminants	Old A/B Device #C7	New RTO Device #C49	Δ, lb/day
NO_x	0.93 lb/hr	0.56 lb/hr	-0.37 lb/hr
	22 lb/day	13.0 lb/day	-9.0 lb/day
CO	0.25 lb/hr	0.15 lb/hr	-0.10 lb/hr
	6.0 lb/day	3.6 lb/day	-2.4 lb/day
PM_{10}	0.05 lb/hr	0.03 lb/hr	-0.09 lb/hr
	1.3 lb/day	0.77 lb/day	-0.53 lb/day

RTO Design:

Total maximum contaminated process flow rate	16,000 scfm
Design capacity of the control equipment	16,000 scfm
Inlet operating temp.	70°F
Outlet operating temp from combustion chamber	1475°F
Heat exchanger efficiency	95%
Heat input rating of the burner	4.5 mmBTU/hr
Volume of the combustion zone	848 ft^3

Worst Case – Heat required to heat air from 70°F to 1475°F:

M = 16,000 scfm x 0.075 lb/scf x 60 min/hr = 72,000 lb/hr
Cp_{70} = 0.240 Btu/lb-°F
Cp_{1475} = 0.272 Btu/lb-°F
Cp_{avg} = 0.256 Btu/lb-°F
Q = MCp ΔT
= 72,000 x 0.256 x (1475 – 70)
= 25.9 mmBtu/hr

After 95% heat recovery:

Q = 25.9 x 0.05 = 1.3 Btu/hr
Heat input needed = 1.3 x 1050/632 (AP 40, page 948, Table D7)
= 2.16 mmBtu/hr

Contaminated airflow is sufficient to provide the necessary air. The oxidizer will have a burner rated at 4.5 mmBtu/hr, which is sufficient to heat the bed and maintain the oxidizer temperature.

Residence time calculation:

Total flow rate = 16,000 cfm
Q (flow rate per second) = 16,000 cfm x [(1475 + 460)/(70 + 460)] x (15.1/14/7) psia
= 59976.8 cfm/60 sec/min = 999.6 cu. ft.

Residence time = V/Q = combustion chamber vol./flow rate = 848/999.6 = 0.85 sec
0.85 sec $\geq$ 0.3 sec recommended residence time

RULES AND REGULATIONS

RULE 212: SIGNIFICANT PROJECT PUBLIC NOTIFICATION

Rule 212(c)(1):
There is no school within 1000 feet of the plant. Therefore, public notice is not required.

Rule 212(c)(2):
Public notice is not required by this paragraph since there is no emissions increase.

Rule 212(c)(3):
The toxic emissions from the combustion of natural gas result in MICR well below 1 x 10^{-6}. Therefore, public notice is not required.

RULE 401: VISIBLE EMISSIONS
Visible emissions from the operation of this equipment are not expected. No complaints have been filed on this company.

RULE 402: NUISANCE
The operation of this equipment is not expected to cause a public nuisance. No violations have been filed against this company. There were a few odor complaints but they did not receive any NC or NOV. With proper operation of the RTO and the PTEs, odors are not expected from this equipment outside the buildings.

RULE 1128: PAPER, FABRIC, AND FILM COATING OPERATIONS
Dip room #2 (D9) and Rotocure press #10 (D41) are in a PTE vented to this RTO #8 (C49), were required to meet a minimum 95% destruction efficiency, and 90% collection efficiency [per Rule 1128(d)]. The RTO #8 was source tested on May 1, 2007. The overall destruction efficiency was determined to be a minimum of 98.3%. Compliance is expected.

REGULATION XIII:
There are no changes to the operation of the basic equipment venting to RTO #8 (C49). BACT is not triggered. The new RTO #8 was source tested on May 1, 2007, and demonstrated a minimum overall destruction efficiency of 98.3%. The new RTO #8 is a replacement to the previous afterburner (C15). It is functionally identical and the replacement burner rating and emissions are less than the previous burner. Therefore, this equipment is exempt from offset requirements per Rule 1304(a)(1) - replacement

Rule 1401: NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS
There is no increase in emissions due to the replacement of the afterburner because the new RTO burner is rated at a lower Btu/hr rating than the previous one. Therefore, there is a reduction of

toxic emissions and MICR is below one in a million. The hazard and chronic indices (HIA and HIC) do not exceed 1.0 (Attachment 3). Therefore, this equipment is in compliance with this rule.

REG XXX

This facility is not in the RECLAIM program. The proposed project is considered as a "de minimis significant permit revision" to the Title V permit for this facility.

Rule 3000(b)(6) defines a "de minimis significant permit revision" as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAPs) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

Air Contaminant	Daily Maximum (lbs/day)
HAP	30
VOC	30
NO_x	40
PM_{10}	30
SO_x	60
CO	220

To determine if a project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. This proposed project is part of the 1st permit revision to the Title V renewal permit issued to this facility on May 9, 2005. This revision also includes several other changes, as summarized in the following table (these evaluations were done separately).The following table summarizes the cumulative emission increases resulting from all permit revisions since the Title V renewal permit was issued:

Title V Permit Revisions Summary

1st Revision	HAP	VOC	NO_x	PM_{10}	SO_x	CO
Replacing A/B #1 (C15) with RTO #7 (C48) venting pre-pregger #1 (D11-D13), Honeycomb Nomex bake oven (D14) and dip room #1 (D8) (A/N 422026)	0	0	-13.6	-0.77	0	-3.6
Admin C/C to split D11, D12 and D13 from PO #F61780 (C15/C48, D8) (A/N 456659)	0	0	0	0	0	0
Admin C/C to split D14 from PO #F61780 (C15/C48, D8) (A/N 456660)	0	0	0	0	0	0
Admin C/C to relocate RTO #6 (C10) and vent C16-C17 and D20-D22 (A/N 456662)	0	0	0	0	0	0
Admin C/C to remove D19 and to vent D20-D22 to RTO #6 (C47), instead of C23 (A/N 456663)	0	0	0	0	0	0
Admin C/C to vent D16-D17 to RTO #6 (C47) instead of to C18 (A/N 456664)	0	0	0	0	0	0
Operation of RTO #8 (C49), to replace AB #5 (C7), to vent dip coating operation #2 (D9), Rotocure press #10 (D41), and Honeycomb bake ovens #2 and #4 (D5 and D6) (A/N 456665)	0	0	-9.0	-0.53	0	-2.4
New boiler #11 (D51) (A/N 481672)	0	3.21	5.25	3.44	0.38	35.81
Change of condition for spray booth D39) (A/N 446595)	0	-3	0	0	0	0
Change of condition for spray booth (D1) (A/N 454623)	0	0	0	0	0	0
Cumulative Total	0	0	-17.35	2.14	0.38	29.81
Maximum Daily	30	30	40	30	60	220

Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a "de minimis significant permit revision".

RECOMMENDATION/CONCLUSION:

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a "de minimis significant permit revision", it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, a revised Title V permit will be issued to this facility.